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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/265,432	03/10/1999	AKIHIRO TERADA	392.1627/JDH	4506

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EXAMINER

NGUYEN, THU V

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/265,432

**Applicant(s)**

TERADA ET AL.

**Examiner**

Thu Nguyen

**Art Unit**

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-9 and 12-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-9 and 12-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

The amendment filed on has been entered. By this amendment, claims 2-3, 10-11, 17-19 have been canceled. In view of the amended claim, the restriction requirement issued on October 18, 2002 has been withdrawn, accordingly, all claims 1, 4-9, 12-16 will be examined in this office action. All claims 1, 4-9, 12-16 are now pending in the application.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 4-7, 9, 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (US 4,507,042) in view of Hirai et al (US 5,770,936) and further in view of Nakano et al (EP 0 672 496) (IDS submitted on November 28, 2000).

As per claim 1, Suzuki teaches a robot system comprising: a movable arm with a plurality of links 12-13 (fig.1) and a wrist 14 (fig.1); and a tool unit 2 (fig.1) mounted on the wrist having an effecting end biased with a radial offset with the final rotational axis of the wrist (col.1, lines 56-63). Suzuki does not teach that the arm is controlled by a robot controller, that the cutting tool includes a variable axis, and that the effecting end is a cutting end. However, including a robot controller for controlling the movement of the robot arm would have been well known.

Further, Hirai teaches a cutting tool 23-24 (fig.2) together with the rectangular structure for the tool post to mount on including a variable axis (fig.2) (col.1, lines 26-66; col.2, lines 36-61).

Hirai does not teach biasing the cutting end effector toward the final rotation axis, however, biasing the end effector toward a direction according to a specific need would have been obvious design choice, moreover, biasing an end effector toward the final axis would have been a known shape as disclosed by Nakano in fig.15 (element 466, 468). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to implement a well known controller and the cutting tool of Hirai in combination with the shape of the end effector taught by Nakano to the robot arm of Suzuki in order to facilitate moving the cutting tool around the object being cut.

As per claim 4-7, Hirai teaches both linear and rotary axis (fig.2).

As per claim 9, refer to claim 1 above. Further, Hirai teaches arranging the work piece 25 (fig.2) or 34 (fig.3) (and also Nakano teaches such the arrangement in fig.15) so that the central axis of the workpiece is aligned with the final rotation axis. And both Hirai teaches the capability of rotating the final rotation axis (Hirai fig.2 and 3; and Nakano fig.15).

As per claim 12-15, refer to claims 4-7 above.

As per claim 16, refer to claim 9 above. Moreover, performing saddle like cutting on a workpiece would have been well known cutting procedure. Claim 16 is similar to claim 1 and 9 except that the robot is disclosed in broader scope by eliminating the bias toward the final rotation axis of the end effector, and the tool is not limited to a cutting tool. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to perform well known saddle-like cutting on the workpiece 34 (fig.3) of Hirai according to a specific cutting shape needed at the workpiece.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crisman et al (US 5,570,920).

As per claim 8, Crisman teaches a robot system comprising an arm 22 (fig.1) (col.2, lines 61-67; col.3, lines 1-6); a tool unit 10 (fig.1) having additional rotation axis between link 50 (fig.1) bias with respect to the final rotation axis and a variable axis between link 50 and 12 (fig.1). Crisman does not explicitly teaches a robot arm as claimed with controller having a software, and the movability of the arm, however, controlling the robot arm to move using a controller executing a software would have been well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include a controller to control movement of the robot arm of Crisman in order to control full motion of the robot arm.

### ***Response to Arguments***

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4. Applicant's arguments have been considered but are moot in view of the new grounds of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

**Any response to this final action should be mailed to:**

Box AF

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 305-7687, (for formal communications; please mark "EXPEDITED  
PROCEDURE")

Art Unit: 3661

Or:


(703) 305-7687 (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park V, 2451 Crystal  
Drive, Arlington, VA., Seventh Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the  
examiner should be directed to Thu Nguyen whose telephone number is (703) 306-9130. The  
examiner can normally be reached on Monday-Thursday from 8:00 am to 6:00 pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's  
supervisor, Thomas Black, can be reached on (703) 305-8233. The fax phone number for this  
Group is (703) 305-7687.

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the Group receptionist whose telephone number is (703) 308-1113.



**THU V. NGUYEN**  
**PRIMARY EXAMINER**

November 11, 2004